

Chiltons auto repair  
manual

1980-1987

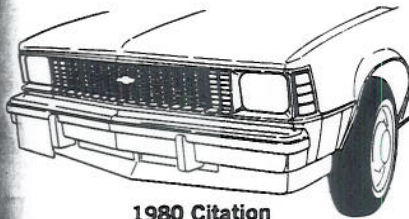
O-8019-7670-7

# GM "A" & "X" Body

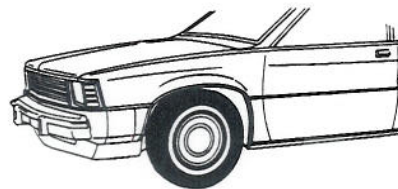
Celebrity, Century, Cutlass  
Ciera, 6000, Citation, Omega,  
Phoenix, Skylark



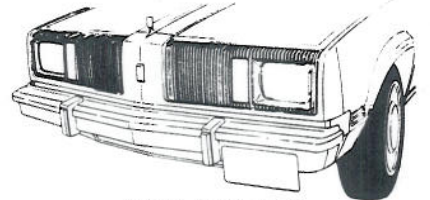
## YEAR IDENTIFICATION



1980 Citation



1981-85 Citation



1980-81 Omega



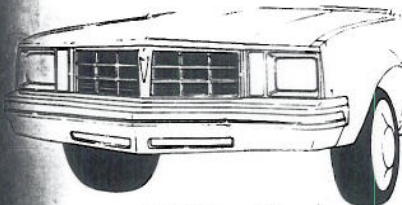
1982-83 Omega



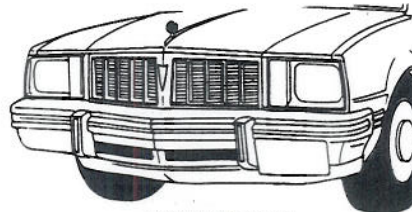
1984 Omega ES



1984 Omega Sedan



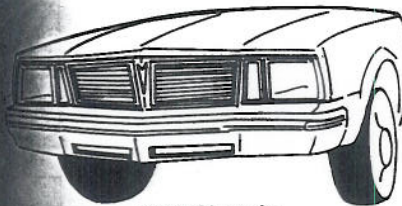
1980 Phoenix



1981 Phoenix



1982 Phoenix



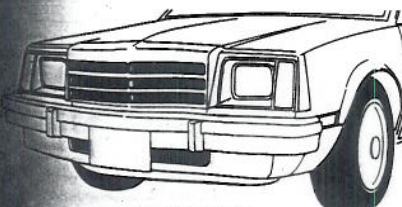
1983 Phoenix



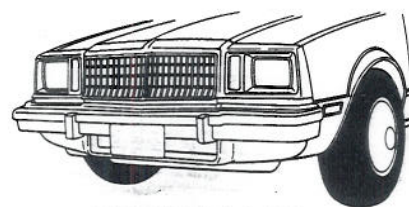
1984 Phoenix LE, SE



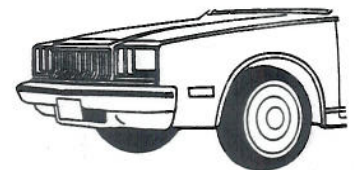
1980 Skylark



1981 Skylark



1984-85 Skylark T Type



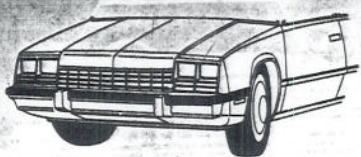
1981-85 Skylark Sport Coupe



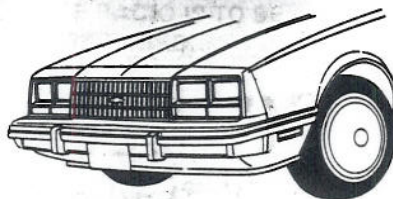


# GM "A" & "X" BODY

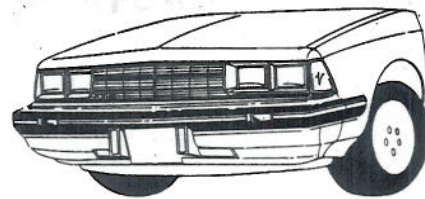
## YEAR IDENTIFICATION



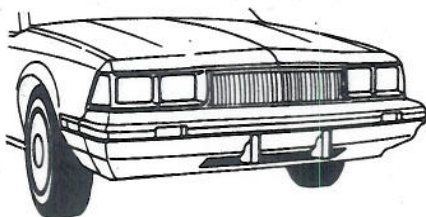
1982-83 Celebrity



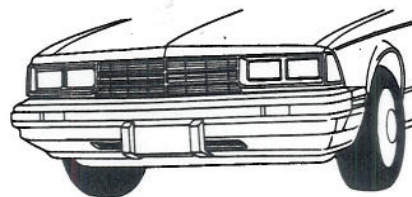
1984-85 Celebrity



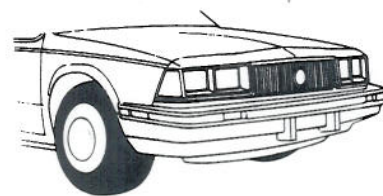
1982-83 Century



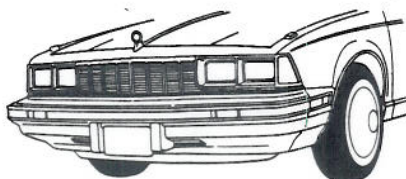
1984-85 Century



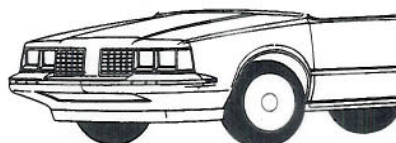
1984 Century T Type



1985 Century T Type



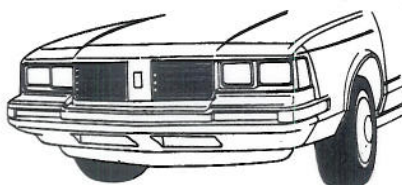
1984 Century Custom, Limited



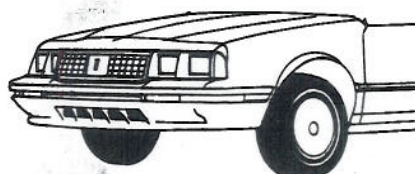
1982-83 Cutlass Ciera



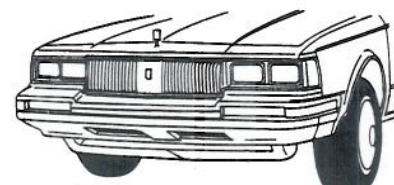
1983 Cutlass Ciera ES



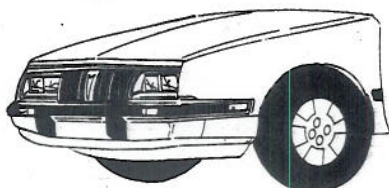
1984 Ciera



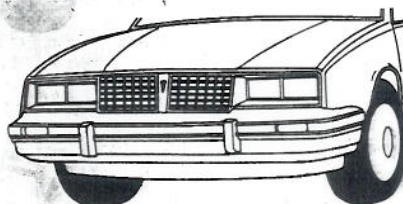
1985-86 Cutlass Ciera



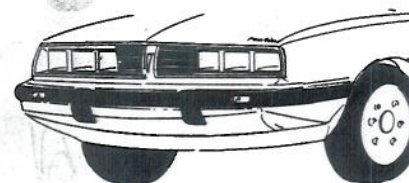
1984-86 Cutlass Cruiser



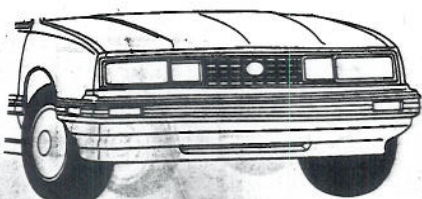
1982-83 6000



1984 6000, 6000 LE



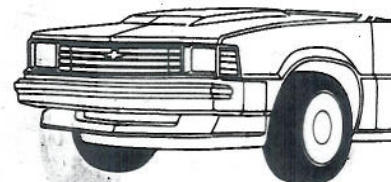
1983-85 6000 STE



1986 6000 STE

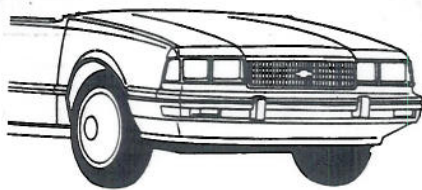


1985-86 6000, 6000 LE

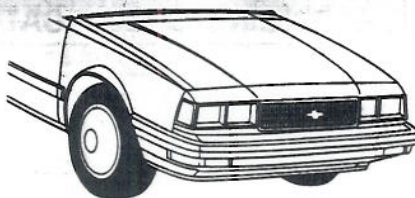


1982-85 Citation

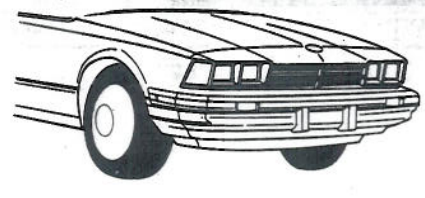




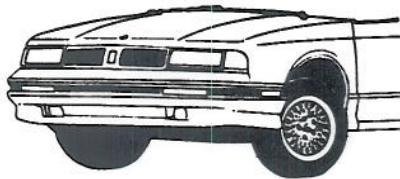
1986-87 Celebrity



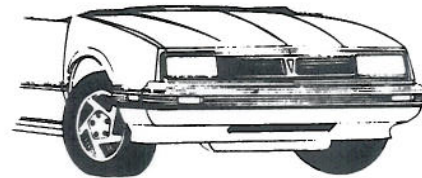
1985-87 Celebrity Eurosport



1986-87 Century



1987 Cutlass Ciera GT



1987 Pontiac 6000 SE

### VEHICLE IDENTIFICATION NUMBER (VIN)

It is important for servicing and ordering parts to be certain of the vehicle and engine identification. The VIN (vehicle identification number) is a 13 or 17 digit number visible through the windshield on the driver's side of the dash and contains the vehicle and engine identification codes. It can be interpreted as follows:

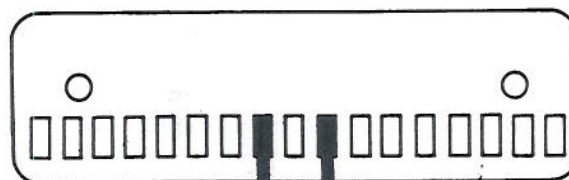
| Engine Code |         |        |      |       |           |
|-------------|---------|--------|------|-------|-----------|
| Code        | Cu. In. | Liters | Cyl. | Carb. | Eng. Mfg. |
| 5           | 151     | 2.5    | 4    | 2     | Pont.     |
| 7           | 173     | 2.8    | V6   | 2     | Chev.     |

| Model Year Code |      |
|-----------------|------|
| Code            | Year |
| A               | 1980 |

The thirteen digit Vehicle Identification Number can be used to determine engine application and model year. The 6th digit indicates the model year, and the 5th digit identifies the factory installed engine.

### VEHICLE IDENTIFICATION NUMBER (VIN)

It is important for servicing and ordering parts to be certain of the vehicle and engine identification. The VIN (vehicle identification number) is a 13 or 17 digit number visible through the windshield on the driver's side of the dash and contains the vehicle and engine identification codes. It can be interpreted as follows:



| Engine Code |         |        |      |        |           |
|-------------|---------|--------|------|--------|-----------|
| Code        | Cu. In. | Liters | Cyl. | Carb.  | Eng. Mfg. |
| 5           | 151     | 2.5    | 4    | 2      | Pont.     |
| R           | 151     | 2.5    | 4    | TBI    | Pont.     |
| X           | 173     | 2.8    | V6   | 2      | Chev.     |
| Z           | 173(HO) | 2.8    | V6   | 2      | Chev.     |
| E           | 181     | 3.0    | V6   | 2      | Buick     |
| 3           | 231     | 3.8    | V6   | MFI    | Buick     |
| T           | 263     | 4.3    | V6   | Diesel | Olds      |
| W           | 173     | 2.8    | V6   | MFI    | Chev.     |
| L           | 181     | 3.0    | V6   | MFI    | Buick     |
| B           | 231     | 3.8    | V6   | SFI    | Buick     |

| Model Year Code |      |
|-----------------|------|
| Code            | Year |
| B               | 1981 |
| C               | 1982 |
| D               | 1983 |
| E               | 1984 |
| F               | 1985 |
| G               | 1986 |
| H               | 1987 |

The seventeen digit Vehicle Identification Number can be used to determine engine application and model year. The 10th digit indicates the model year and the 8th digit identifies the factory installed engine.

TBI: Throttle Body Injection  
MFI: Multi-Point Fuel Injection





# GM "A" & "X" BODY

## GENERAL ENGINE SPECIFICATIONS

| Year    | VIN Code | Engine No. Cyl. Displ. (cu. in.) | Eng. Mfg. | Fuel Delivery System | Horsepower @ rpm | Torque ft. lb. @ rpm | Bore x Stroke | Compression Ratio | Oil Pressure @ 2000 rpm |
|---------|----------|----------------------------------|-----------|----------------------|------------------|----------------------|---------------|-------------------|-------------------------|
| 1980-81 | 5        | 4-151                            | Pont.     | 2-bbl                | 90 @ 4000        | 135 @ 2400           | 4.000 x 3.000 | 8.2:1             | 37.5                    |
|         | 5        | 4-151 Calif.                     | Pont.     | 2-bbl                | 90 @ 4400        | 128 @ 2400           | 4.000 x 3.000 | 8.2:1             | 37.5                    |
|         | X        | 6-173                            | Chev.     | 2-bbl                | 115 @ 4800       | 150 @ 2000           | 3.500 x 3.000 | 8.5:1             | 30-45                   |
|         | X        | 6-173 Calif.                     | Chev.     | 2-bbl                | 110 @ 4800       | 140 @ 2000           | 3.500 x 3.000 | 8.5:1             | 30-45                   |
|         | Z        | 6-173 HO                         | Chev.     | 2-bbl                | 135 @ 4800       | 165 @ 2400           | 3.500 x 3.000 | 8.9:1             | 30-45                   |
| 1982    | R        | 4-151                            | Pont.     | TBI                  | 90 @ 4000        | 134 @ 2400           | 4.000 x 3.000 | 8.2:1             | 37.5                    |
|         | X        | 6-173                            | Chev.     | 2-bbl                | 112 @ 5100       | 148 @ 2400           | 3.500 x 3.000 | 8.42:1            | 30-45                   |
|         | Z        | 6-173 HO                         | Chev.     | 2-bbl                | 135 @ 5400       | 142 @ 2400           | 3.500 x 3.000 | 8.94:1            | 30-45                   |
| 1983    | R        | 4-151                            | Pont.     | TBI                  | 92 @ 4000        | 134 @ 2800           | 4.000 x 3.000 | 8.2:1             | 37.5                    |
|         | X        | 6-173                            | Chev.     | 2-bbl                | 112 @ 4800       | 145 @ 2100           | 3.500 x 3.000 | 8.5:1             | 50-65                   |
|         | Z        | 6-173 HO                         | Chev.     | 2-bbl                | 135 @ 5400       | 145 @ 2400           | 3.500 x 3.000 | 8.9:1             | ①                       |
|         | E        | 6-181                            | Buick     | 2-bbl                | 110 @ 4800       | 145 @ 2600           | 3.800 x 2.660 | 8.45:1            | 35-42                   |
| 1984    | R        | 4-151                            | Pont.     | TBI                  | 92 @ 4000        | 134 @ 2800           | 4.000 x 3.000 | 9.0:1             | 37.5                    |
|         | X        | 6-173                            | Chev.     | 2-bbl                | 112 @ 4800       | 145 @ 2100           | 3.500 x 2.990 | 8.5:1             | ①                       |
|         | Z        | 6-173 HO                         | Chev.     | 2-bbl                | 130 @ 5400       | 145 @ 2400           | 3.500 x 2.900 | 8.9:1             | ①                       |
|         | E        | 6-181                            | Buick     | 2-bbl                | 110 @ 4800       | 145 @ 2600           | 3.800 x 2.660 | 8.45:1            | 35-42                   |
| 1985    | R        | 4-151                            | Pont.     | TBI                  | 92 @ 4400        | 134 @ 2800           | 4.000 x 3.000 | 9.0:1             | 37.5                    |
|         | X        | 6-173                            | Chev.     | 2-bbl                | 112 @ 4800       | 145 @ 2100           | 3.500 x 2.990 | 8.5:1             | 50-65                   |
|         | W        | 6-173                            | Chev.     | MFI                  | 130 @ 4800       | 155 @ 3600           | 3.500 x 2.990 | 8.9:1             | 50-65                   |
|         | Z        | 6-173 HO                         | Chev.     | MFI                  | 125 @ 4500       | 165 @ 3600           | 3.500 x 2.990 | 8.9:1             | 50-65                   |
|         | E        | 6-181                            | Buick     | 2-bbl                | 110 @ 4800       | 145 @ 2600           | 3.800 x 2.660 | 8.45:1            | 35-42                   |
|         | 3        | 6-231                            | Buick     | MFI                  | 125 @ 4400       | 195 @ 2000           | 3.800 x 3.400 | 8.0:1             | 35-42                   |
| 1986-87 | R        | 4-151                            | Pont.     | TBI                  | 92 @ 4400        | 134 @ 2800           | 4.000 x 3.000 | 9.0:1             | 37.5                    |
|         | X        | 6-173                            | Chev.     | 2-bbl                | 112 @ 4800       | 145 @ 2100           | 3.500 x 2.990 | 8.0:1             | ①                       |
|         | W        | 6-173                            | Chev.     | MFI                  | 125 @ 4800       | 160 @ 3600           | 3.500 x 2.990 | 8.5:1             | ①                       |
|         | L,E      | 6-181                            | Buick     | MFI                  | 125 @ 4900       | 150 @ 2400           | 3.800 x 2.660 | 8.45:1            | ②                       |
|         | B,3      | 6-231                            | Buick     | SFI                  | 125 @ 4400       | 195 @ 2000           | 3.800 x 3.400 | 8.0:1             | ②                       |

① 50-65 psi @ 1200 rpm

② 37 psi @ 2400 rpm

## DIESEL ENGINE SPECIFICATIONS

| Year    | VIN Code | Engine No. Cyl. Displ. (cu. in.) | Eng. Mfg. | Fuel Delivery System | Horsepower @ rpm | Torque ft. lb. @ rpm | Bore x Stroke | Compression Ratio | Oil Pressure @ 2000 rpm |
|---------|----------|----------------------------------|-----------|----------------------|------------------|----------------------|---------------|-------------------|-------------------------|
| 1983-85 | T        | 6-263                            | Olds.     | Diesel               | 85 @ 3600        | 165 @ 1600           | 4.057 x 3.385 | 21.6:1            | 40-45                   |

## TUNE-UP SPECIFICATIONS

When analyzing compression test results, look for uniformity among cylinders rather than specific pressures.

| Year | VIN Code | Eng. No. Cyl. Displ. (cu. in.) | Eng. Mfg. | hp  | Spark Plugs |           | Ignition Timing (deg) ▲ |              | Intake Valve Opens (deg) ■ | Fuel Pump Pressure (psi) | Idle Speed (rpm) ▲ |              |
|------|----------|--------------------------------|-----------|-----|-------------|-----------|-------------------------|--------------|----------------------------|--------------------------|--------------------|--------------|
|      |          |                                |           |     | Orig. Type  | Gap (in.) | Man. Trans.             | Auto. Trans. |                            |                          | Man. Trans.        | Auto. Trans. |
| '80  | 5        | 4-151                          | Pont.     | 90  | R-43TSX     | 0.060     | 10B③                    | 10B          | 33                         | 6.5-8.0                  | 1000               | 650          |
|      | X        | 6-173                          | Chev.     | 110 | R-44TS      | 0.045     | 2B④                     | 6B⑤          | 25                         | 6.0-7.5                  | 750⑥               | 750⑥         |
| '81  | 5        | 4-151                          | Pont.     | 90  | R-44TSX     | 0.060     | 4B                      | 4B           | 33                         | 6.5-8.0                  | 1000               | 675          |
|      | X        | 6-173                          | Chev.     | 110 | R-43TS      | 0.045     | 6B                      | 10B          | 25                         | 6.0-7.5                  | 850                | 850⑦         |
|      | Z        | 6-173 HO                       | Chev.     | 135 | R-42TS      | 0.045     | 10B                     | 10B          | 31                         | 6.0-7.5                  | 700                | 700          |





# GM "A" & "X" BODY

## CAPACITIES A-Body

| Year    | VIN Code | Engine Displacement (cu. in.) | Eng. Mfg. | Crankcase (qts) |           | Transaxle Pints |       | Gas Tank (gals) | Cooling System (qts) |       |
|---------|----------|-------------------------------|-----------|-----------------|-----------|-----------------|-------|-----------------|----------------------|-------|
|         |          |                               |           | w/filter        | wo/filter | Manual          | Auto  |                 | w/heater             | w/AC  |
| '82-'85 | R        | 4-151                         | Pont.     | 3.0             | 2.8       | 6.0             | 10.0  | 16.0            | 9.5                  | 9.75  |
|         | X,W      | 6-173                         | Chev.     | 4.0             | 3.0       | 6.0             | 10.0  | 16.0            | 11.5                 | 11.75 |
|         | E        | 6-181                         | Buick     | 4.0             | 3.0       | —               | 10.0② | 16.0            | 13.5                 | 14.25 |
|         | 3        | 6-231                         | Buick     | 4.0①            | 4.0       | —               | 13.0  | 16.0            | 12.25                | 12.75 |
|         | T        | 6-263                         | Olds.     | 6.0             | 5.5       | —               | 10.0② | 16.0            | 13.25                | 13.75 |
| '86-'87 | R        | 4-151                         | Pont.     | 3.0             | 3.0       | 6.0             | 18    | 15.7            | 9.8                  | 9.6   |
|         | X,W      | 6-173                         | Chev.     | 4.0             | 4.0       | 6.0             | 18    | 16.4            | 12.5                 | 12.6  |
|         | L,E      | 6-181                         | Buick     | 4.0             | 4.0       | 6.0             | 18    | 16.0            | 14.4                 | 14.0  |
|         | B,3      | 6-231                         | Buick     | 4.0             | 4.0       | 6.0             | 18    | 16.0            | 11.4                 | 12.0  |
|         | T        | 6-263                         | Olds.     | 6.0             | 6.0       | 6.0             | 18    | 16.6            | 13.2                 | 13.9  |

① Add as necessary to bring to appropriate level.

② 13.0 pts w/440T4 transaxle.

## CAPACITIES X-Body

| Year    | VIN Code | Engine No. Cyl. Displacement (cu. in.) | Engine Crankcase Add 1 qt For New Filter | Transmission (Pts-to-Refill After Draining) |           | Drive Axle (pts) | Gasoline Tank (gals) | Cooling System (qts) |      |
|---------|----------|--|--|---|-----------|------------------|----------------------|----------------------|------|
|         |          |  |  | Manual                                      | Automatic |                  |                      | w/Heater             | w/AC |
| '80-'81 | 5,R      | 4-151                                  | 3  | 5.9   | 10.5      | ①                | 14                   | 8.3                  | 8.6  |
|         | 7        | 6-173                                  | 4  | 5.9   | 10.5      | ①                | 14                   | 10.2                 | 10.6 |
| '82     | 5,R      | 4-151                                  | 3  | 5.9   | 10.5      | ①                | 14                   | 8.3                  | 8.6  |
|         | X        | 6-173                                  | 4  | 5.9   | 10.5      | ①                | 14                   | 10.6                 | 10.8 |
| '83-'85 | 5,R      | 4-151                                  | 3  | 5.9   | 10.5      | ①                | 14.6                 | 8.3                  | 8.6  |
|         | X        | 6-173                                  | 4  | 5.9   | 10.5      | ①                | 15.1                 | 10.6                 | 10.8 |
|         | Z,W      | 6-173 HO                               | 4  | 5.9   | 10.5      | ①                | 15.5                 | 10.6                 | 10.8 |

① Transaxle refill given with transmission capacity

## CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS

All measurements are given in inches

| Year    | VIN Code | Engine No. Cyl. Displacement (cu. in.) | Eng. Mfg. | Crankshaft                 |                         |                |               | Connecting Rod   |               |                |
|---------|----------|--|-----------|----------------------------|-------------------------|----------------|---------------|------------------|---------------|----------------|
|         |          |  |           | Main Brg. Journal Diameter | Main Brg. Oil Clearance | Shaft End-Play | Thrust on No. | Journal Diameter | Oil Clearance | Side Clearance |
| '80-'87 | R,5      | 4-151                                  | Pont.     | 2.2995-                    | 0.0005-                 | 0.0035-        | 5             | 1.9995-          | 0.0005-       | 0.006-         |
|         |          |  |           | 2.3005                     | 0.0022                  | 0.0085         |               | 2.0005           | 0.0026        | 0.022          |
|         | W,X,Z    | 6-173                                  | Chev.     | 2.4937-                    | 0.0017-                 | 0.0020-②       | 3             | 1.9984-          | 0.0014-       | 0.006-         |
|         |          |  |           | 2.4946                     | 0.0030                  | 0.0067③        |               | 1.9994           | 0.0036        | 0.017          |
|         | L,E      | 6-181                                  | Buick     | 2.4990-                    | 0.0003-                 | 0.0030-        | 2             | 2.2487-          | 0.0005-       | 0.006-         |
|         |          |  |           | 2.5000                     | 0.0018                  | 0.0090         |               | 2.2495           | 0.0026        | 0.023          |
|         | B,3      | 6-231                                  | Buick     | 2.4995                     | 0.0003-                 | 0.003-         | 2             | 2.2487-          | 0.0005-       | 0.006-         |
|         |          |  |           |                            | 0.0018                  | 0.011          |               | 2.2495           | 0.0026        | 0.023          |
|         | T        | 6-263                                  | Olds.     | 2.9993-                    | ①                       | 0.0035-        | 4             | 2.2490-          | 0.0003-       | 0.008-         |
|         |          |  |           | 3.0003                     |                         | 0.0135         |               | 2.2510           | 0.0025        | 0.021          |

① No. 1, 2, 3: 0.0005-0.0021  
No. 4: 0.0020-0.0034

② 1980: 0.0020-0.0079

③ 1986-87: 0.0020-0.0033



## VALVE SPECIFICATIONS

| Year    | VIN Code | Engine No. Cyl. Displacement (cu. in.) | Eng. Mfg. | Seat Angle (deg) | Face Angle (deg) | Spring Test Pressure (lbs. @ in.) | Spring Installed Height (in.) | Stem-to-Guide Clearance (in.) |               | Stem Diameter (in.) |               |
|---------|----------|--|-----------|------------------|------------------|-----------------------------------|-------------------------------|-------------------------------|---------------|---------------------|---------------|
|         |          |  |           |                  |                  |                                   |                               | Intake                        | Exhaust       | Intake              | Exhaust       |
| '80-'85 | R,5      | 4-151                                  | Pont.     | 46               | 45               | 176 @ 1.254                       | 1.660                         | 0.0010-0.0027                 | 0.0010-0.0027 | 0.3418-0.3425       | 0.3418-0.3425 |
|         | W,X,Z    | 6-173                                  | Chev.     | 46               | 45               | 155 @ 1.160                       | 1.610                         | 0.0010-0.0027                 | 0.0010-0.0027 | 0.3410-0.3416       | 0.3410-0.3416 |
|         | E        | 6-181                                  | Buick     | 45               | 45               | 220 @ 1.340                       | 1.727                         | 0.0015-0.0035                 | 0.0015-0.0032 | 0.3401-0.3412       | 0.3402-0.3415 |
|         | 3        | 6-231                                  | Buick     | 45               | 45               | 220 @ 1.340                       | 1.727                         | 0.0015-0.0035                 | 0.0015-0.0032 | 0.3401-0.3412       | 0.3405-0.3412 |
|         | T        | 6-263                                  | Olds.     | ①                | ②                | 210 @ 1.220                       | 1.670                         | 0.0010-0.0027                 | 0.0015-0.0032 | 0.3425-0.3432       | 0.3420-0.3427 |
| '86-'87 | R        | 4-151                                  | Pont.     | 46               | 45               | 170-180 @ 1.260                   | 1.690                         | —                             | —             | 0.3420-0.3430       | 0.3420-0.3430 |
|         | W,X      | 6-173                                  | Chev.     | 46               | 45               | 155 @ 1.160                       | 1.610                         | 0.0260-0.0268                 | 0.0260-0.0268 | —                   | —             |
|         | L,E      | 6-181                                  | Buick     | 45               | 45               | 220 @ 1.340                       | 1.727                         | 0.0015-0.0032                 | 0.0015-0.0032 | 0.3405-0.3412       | 0.3405-0.3412 |
|         | B,3      | 6-231                                  | Buick     | 45               | 45               | 220 @ 1.340                       | 1.727                         | 0.0015-0.0032                 | 0.3405-0.3412 | 0.3405-0.3412       | —             |
|         | T        | 6-263                                  | Olds.     | ①                | ②                | 210 @ 1.220                       | 1.670                         | 0.0010-0.0027                 | 0.0015-0.0027 | 0.3425-0.3432       | 0.3420-0.3427 |

- ① Intake: 45  
Exhaust: 32  
② Intake: 44  
Exhaust: 30

## CAMSHAFT SPECIFICATIONS

All measurements are given in inches

| Year    | VIN Code | Engine | Eng. Mfg. | Journal Diameter |        |        |        |           | Bearing Clearance | Lobe Lift |         | Camshaft End Play |
|---------|----------|--------|-----------|------------------|--------|--------|--------|-----------|-------------------|-----------|---------|-------------------|
|         |          |        |           | 1                | 2      | 3      | 4      | 5         |                   | Intake    | Exhaust |                   |
| '80-'85 | R,5      | 4-151  | Pont.     | 1.869            | 1.869  | 1.869  | —      | —         | 0.0007-0.0027     | 0.398     | 0.398   | 0.0015-0.0050     |
|         | W,X,Z    | 6-173  | Chev.     | 1.869            | 1.869  | 1.869  | 1.869  | —         | 0.0010-0.0040     | 0.231     | 0.263   | —                 |
|         | E        | 6-181  | Buick     | 1.786            | 1.786  | 1.786  | 1.786  | 1.786     | ①                 | 0.406     | 0.406   | —                 |
|         | 3        | 6-231  | Buick     | 1.786            | 1.786  | 1.786  | 1.786  | 1.786     | ①                 | N.A.      | N.A.    | —                 |
|         | T        | 6-263  | Olds.     | ②                | 2.205  | 2.185  | 2.165  | —         | 0.0020-0.0059     | N.A.      | N.A.    | 0.0008-0.0228     |
| '86-'87 | R        | 4-151  | Pont.     | 1.869            | 1.869  | 1.869  | —      | —         | 0.0007-0.0027     | 0.398     | 0.398   | 0.0015-0.0050     |
|         | W        | 6-173  | Chev.     | 1.8678           | 1.8678 | 1.8678 | 1.8678 | —         | .001-.004         | .2626     | .2732   | —                 |
|         | X        | 6-173  | Chev.     | 1.8678           | 1.8678 | 1.8678 | —      | .001-.004 | .231              | .2626     | —       | —                 |
|         | L,E      | 6-181  | Buick     | 1.786            | 1.786  | 1.786  | 1.786  | ①         | .358              | .384      | —       | —                 |
|         | B        | 6-231  | Buick     | 1.786            | 1.786  | 1.786  | 1.786  | ①         | .392              | .392      | —       | —                 |
|         | T        | 6-263  | Olds.     | ②                | 2.205  | 2.185  | 2.165  | —         | 0.0020-0.0059     | N.A.      | N.A.    | 0.0008-0.0228     |
|         | 3        | 6-231  | Buick     | 1.786            | 1.786  | 1.786  | 1.786  | ①         | .368              | .384      | —       | —                 |

- ① No. 1: 0.0005-0.0025  
No. 2-5: 0.0005-0.0035  
② No. 1 bearing is not borable, but must be replaced separately.  
N.A. Not available.





# GM "A" & "X" BODY

## PISTON AND RING SPECIFICATIONS

All measurements are given in inches.

| Year    | VIN Code | Engine Type/<br>Disp. (cu. in.) | Eng. Mfg. | Piston-to-Bore Clearance | Ring Gap          |                    |                  | Ring Side Clearance |                    |             |
|---------|----------|---------------------------------|-----------|--------------------------|-------------------|--------------------|------------------|---------------------|--------------------|-------------|
|         |          |                                 |           |                          | Top Compression   | Bottom Compression | Oil Control      | Top Compression     | Bottom Compression | Oil Control |
| '80-'85 | R,5      | 4-151                           | Pont.     | 0.0025-0.0033            | 0.010-①<br>0.022  | 0.020-②<br>0.027   | 0.015-<br>0.055  | 0.0015-<br>0.0030   | 0.0015-<br>0.0030  | snug        |
|         | W,X,Z    | 6-173                           | Chev.     | 0.0017-0.0027            | 0.0098-<br>0.0197 | 0.0098-<br>0.0197  | 0.020-③<br>0.055 | 0.0012-④<br>0.0028  | 0.0016-④<br>0.0037 | 0.008 max.  |
|         | L,E      | 6-181                           | Buick     | 0.0008-0.0020            | 0.013-<br>0.023   | 0.013-<br>0.023    | 0.015-<br>0.035  | 0.0030-<br>0.0050   | 0.0030-<br>0.0050  | 0.0035 max. |
|         | B,3      | 6-231                           | Buick     | 0.0008-0.0020            | 0.010-<br>0.020   | 0.010-<br>0.020    | 0.015-<br>0.055  | 0.0030-<br>0.0050   | 0.0030-<br>0.0050  | 0.0035 max. |
|         | T        | 6-263                           | Olds.     | 0.0030-0.0040            | 0.015-<br>0.025   | 0.015-<br>0.025    | 0.015-<br>0.055  | 0.0050-<br>0.0070   | 0.0030-<br>0.0070  | 0.001-0.005 |
| '86-'87 | R        | 4-151                           | Pont.     | 0.0014-0.0022            | 0.010-<br>0.020   | 0.010-<br>0.020    | 0.020-<br>0.060  | 0.002-<br>0.003     | 0.001-<br>0.003    | 0.015-0.055 |
|         | W        | 6-173                           | Chev.     | 0.001-0.002              | 0.0012-<br>0.0027 | 0.0016-<br>0.0037  | 0.020-<br>0.055  | 0.0098-<br>0.0197   | 0.0098-<br>0.0197  | 0.020-0.055 |
|         | L,E      | 6-181                           | Buick     | 0.0008-0.0020            | 0.010-<br>0.020   | 0.010-<br>0.020    | 0.015-<br>0.055  | 0.0030-<br>0.0050   | 0.0030-<br>0.0050  | 0.0035 max. |
|         | B,3      | 6-231                           | Buick     | 0.0008-0.0020            | 0.010-<br>0.020   | 0.010-<br>0.020    | 0.015-<br>0.055  | 0.0030-<br>0.0050   | 0.0030-<br>0.0050  | 0.0035 max. |
|         | X        | 6-173                           | Chev.     | 0.0007-0.0017            | 0.0012-<br>0.0027 | 0.0016-<br>0.0037  | 0.020-<br>0.055  | 0.0098-<br>0.0197   | 0.0098-<br>0.0197  | 0.020-0.055 |

① 1980: 0.015-0.025

③ 1980: 0.015-0.055

② 1980: 0.009-0.019

④ 1980: 0.012-0.032

## TORQUE SPECIFICATIONS

All readings in ft. lbs.

| Year    | VIN Code | Engine No. Cyl. Displacement (cu. in.) | Eng. Mfg. | Cylinder Head Bolts | Rod Bearing Bolts | Main Bearing Bolts | Crankshaft Bolt | Flywheel-to-Crankshaft Bolts | Manifold |         |
|---------|----------|--|-----------|---------------------|-------------------|--------------------|-----------------|------------------------------|----------|---------|
|         |          |  |           |                     |                   |                    |                 |                              | Intake   | Exhaust |
| '80-'87 | R,5      | 4-151                                  | Pont.     | 85③                 | 32                | 70                 | 200             | 44④                          | 29       | 44      |
|         | W,X,Z    | 6-173                                  | Chev.     | 70⑤                 | 37                | 68                 | 75              | 50                           | 23       | 25      |
|         | L,E      | 6-181                                  | Buick     | 80                  | 40-45             | 100                | 225             | 60                           | 32       | 25-37   |
|         | B,3      | 6-231                                  | Buick     | 80                  | 40-45             | 100                | 225             | 60                           | 32       | 25-37   |
|         | T        | 6-263                                  | Olds.     | ①                   | 42                | 107                | 255②            | 76                           | 41       | 29      |

① All exc. No. 5, 6, 11, 12, 13, 14: 142

No. 5, 6, 11, 12, 13, 14: 59

② Range: 160-350 ft. lb.

③ 1980-81: 75

1984-87: 92

④ 1986-87: 55

⑤ 1986-87: 65-90

## WHEEL ALIGNMENT SPECIFICATIONS

| Year    | Model | Caster*     |                     | Camber      |                     | Toe-In (in.) | Steering Axis (deg) Inclination |
|---------|-------|-------------|---------------------|-------------|---------------------|--------------|---------------------------------|
|         |       | Range (deg) | Pref. Setting (deg) | Range (deg) | Pref. Setting (deg) |              |                                 |
| '80-'81 | All   | 2N-2P       | 0                   | 0-1P        | 1/2P                | 0-3/16       | 14.5                            |
| '82-'87 | All   | 0-4P        | 2P                  | 1/2N-1/2P   | 0                   | 13/64-13/64  | 14.5                            |

\* Caster is not adjustable



## TUNE-UP SPECIFICATIONS

When analyzing compression test results, look for uniformity among cylinders rather than specific pressures.

| Year    | VIN Code | Eng. No. Cyl. Displ. (cu. in.) | Eng. Mfg.   | hp   | Spark Plugs |           | Ignition Timing (deg) ▲ |              | Intake Valve Opens (deg) ■ | Fuel Pump Pressure (psi) | Idle Speed (rpm) ▲ |              |
|---------|----------|--------------------------------|-------------|------|-------------|-----------|-------------------------|--------------|----------------------------|--------------------------|--------------------|--------------|
|         |          |                                |             |      | Orig. Type  | Gap (in.) | Man. Trans.             | Auto. Trans. |                            |                          | Man. Trans.        | Auto. Trans. |
| '82-'84 | 5,R      | 4-151                          | Pont.       | 90   | R-44TSX     | 0.060     | 8B                      | 8B           | 33                         | 6.0-8.0                  | 950①               | 750②         |
|         | X        | 6-173                          | Chev.       | 112  | R-43CTS     | 0.045     | 10B                     | 10B          | 25                         | 6.0-7.5                  | 800                | 600          |
|         | Z,W      | 6-173 HO                       | Chev.       | 135⑩ | R-42CTS     | 0.045     | 6B                      | 10B          | 31                         | 6.0-7.5                  | 850⑧               | 750          |
|         | E        | 6-181                          | Buick       | 110  | R-44TS8     | 0.080     | —                       | 15B          | 16                         | 6.0-8.0                  | —                  | see text     |
|         | 3        | 6-231                          | Buick       | 125  | R-44TS8     | 0.080     | ⑨                       | ⑨            | 4.0-6.5                    | ⑨                        | ⑨                  | —            |
| '85-'86 | T        | 6-263                          | Olds.       | 85   | —           | —         | —                       | 6A           | N.A.                       | 5.8-8.7                  | —                  | 650          |
|         | 5        | 4-151                          | Pont.       | 92   | R-43TXS     | 0.045     | ⑨                       | ⑨            | 33                         | 6.0-7.0                  | ⑨                  | ⑨            |
|         | R        | 4-151                          | Pont.       | 92   | R-43TXS     | 0.60      | ⑨                       | ⑨            | 33                         | 12.0                     | ⑨                  | ⑨            |
|         | X        | 6-173                          | Chev.       | 112  | R-43CTS     | .045      | ⑨                       | ⑨            | 25                         | 6.0-7.5                  | ⑨                  | ⑨            |
|         | Z        | 6-173 HO                       | Chev.       | —    | R-42CTS     | .045      | ⑨                       | ⑨            | —                          | —                        | ⑨                  | ⑨            |
|         | W        | 6-173                          | Chev.       | 125  | R-42CTS     | .045      | ⑨                       | ⑨            | —                          | 24.0-37.0                | ⑨                  | ⑨            |
|         | B,3      | 6-231                          | Buick       | 125  | R-44TS8     | .080      | ⑨                       | ⑨            | —                          | —                        | ⑨                  | ⑨            |
|         | T        | 6-263                          | Diesel Olds | —    | —           | —         | ⑨                       | ⑨            | —                          | 5.5-6.5                  | ⑨                  | ⑨            |
|         | L,E      | 6-181                          | Buick       | 110  | R-44TS      | .060      | ⑨                       | ⑨            | —                          | 3.9-6.5                  | ⑨                  | ⑨            |
|         | '87      |                                |             |      |             |           |                         |              |                            |                          |                    |              |

See Underhood Specifications Sticker

**NOTE:** The underhood specifications sticker often reflects tune-up specification changes made in production. Sticker figures must be used if they disagree with those in this chart.

▲ See text for procedure

■ All figures Before Top Dead Center

B: Before Top Dead Center

A: After Top Dead Center

Part numbers in this chart are not recommendations by Chilton for any product by brand name.

N.A.: Information not available

① Without air conditioning: 850

② Without air conditioning: 680

③ Calif.: 12B

④ Calif.: 6B

⑤ Calif.: 10B

⑥ Calif.: 700

⑦ With A/C: 900

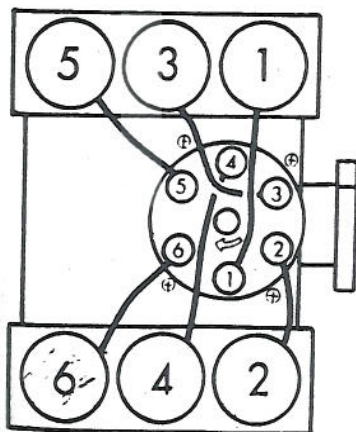
⑧ Calif.: 750

⑨ See underhood specifications sticker

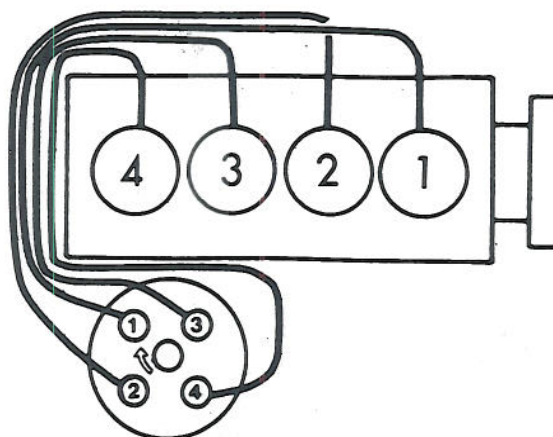
⑩ 130 on code W engine, 1982-84 only

## FIRING ORDERS

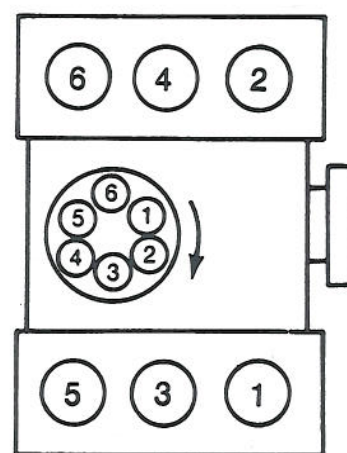
**NOTE:** To avoid confusion, always replace sparkplug wires one at a time.



GM (Buick) 181 V6 (3.0L)  
GM (Buick) 231 V6 (3.8 L)  
Engine firing order: 1-6-5-4-3-2  
Distributor rotation: clockwise



GM (Pontiac) 151-4  
Engine firing order: 1-3-4-2  
Distributor rotation: clockwise

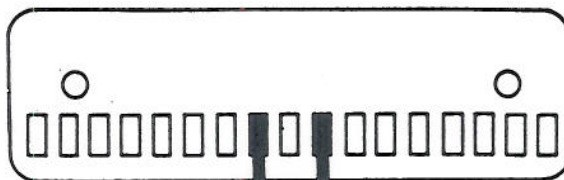


GM (Chevrolet) 173 V6 (2.8 L)  
Engine firing order: 1-2-3-4-5-6  
Distributor rotation: clockwise



## VEHICLE IDENTIFICATION NUMBER (VIN)

It is important for servicing and ordering parts to be certain of the vehicle and engine identification. The VIN (vehicle identification number) is a 13 or 17 digit number visible through the windshield on the driver's side of the dash and contains the vehicle and engine identification codes. It can be interpreted as follows:



| Engine Code   |         |        |      |       |           |
|---------------|---------|--------|------|-------|-----------|
| Code          | Cu. In. | Liters | Cyl. | Carb. | Eng. Mfg. |
| <b>CAMARO</b> |         |        |      |       |           |
| 2             | 151     | 2.5    | 4    | TBI   | Pont.     |
| F③            | 151     | 2.5    | 4    | 2     | Pont.     |
| 1             | 173     | 2.8    | V6   | 2     | Chev.     |
| L             | 173     | 2.8    | V6   | 2     | Chev.     |
| S②            | 173     | 2.8    | 6    | MFI   | Chev.     |
| K             | 229     | 3.8    | 6    | 2     | Chev.     |
| A             | 231     | 3.8    | V6   | 2     | Buick     |
| J             | 267     | 4.4    | 8    | 2     | Chev.     |
| H             | 305     | 5.0    | 8    | 4     | Chev.     |
| 7③            | 305     | 5.0    | 8    | TBI   | Chev.     |
| G             | 305     | 5.0    | 8    | 4     | Chev.     |
| S③            | 305     | 5.0    | 8    | TBI   | Chev.     |
| F②            | 305     | 5.0    | 8    | TPI   | Chev.     |
| L④            | 350     | 5.7    | 8    | 4     | Chev.     |
| 8             | 350     | 5.7    | 8    | TPI   | Chev.     |

| FIREBIRD |       |     |    |     |       |
|----------|-------|-----|----|-----|-------|
| 2        | 151   | 2.5 | 4  | TBI | Pont. |
| F③       | 151   | 2.5 | 4  | 2   | Pont. |
| 1        | 173   | 2.8 | V6 | 2   | Chev. |
| L        | 173   | 2.8 | V6 | 2   | Chev. |
| S②       | 173   | 2.8 | 6  | MFI | Chev. |
| A        | 231   | 3.8 | V6 | 2   | Buick |
| S④       | 265   | 4.3 | 8  | 2   | Pont. |
| W        | 301   | 4.9 | 8  | 4   | Pont. |
| T        | 301 ① | 4.9 | 8  | 4   | Pont. |
| H        | 305   | 5.0 | 8  | 4   | Chev. |
| 7③       | 305   | 5.0 | 8  | TBI | Chev. |
| G        | 305   | 5.0 | 8  | 4   | Chev. |
| F②       | 305   | 5.0 | 8  | TPI | Chev. |

| Model Year Code |      |
|-----------------|------|
| Code            | Year |
| B               | 1981 |
| C               | 1982 |
| D               | 1983 |
| E               | 1984 |
| F               | 1985 |
| G               | 1986 |
| H               | 1987 |

The seventeen digit Vehicle Identification Number can be used to determine engine application and model year. The 10th digit indicates the model year, and the 8th digit identifies the factory installed engine.

① Turbocharged engine

② 1985 and later

③ 1982-83

④ 1981 only

TBI—Throttle body (fuel) injection

TPI—Tuned Port Injection

MFI—Multi-Port Fuel Injection





# GM "F" BODY

## GENERAL ENGINE SPECIFICATIONS

### Camaro

| Year    | Engine VIN Code | Engine No. of Cyl. Displacement (cu. in.) | Engine Manufacturer | Fuel Delivery | Horsepower @ rpm <sup>①</sup> | Torque @ rpm (ft. lbs.) <sup>①</sup> | Bore × Stroke (in.) | Compression Ratio | Oil Press. @ 2000 r |
|---------|-----------------|---|---------------------|---------------|-------------------------------|--------------------------------------|---------------------|-------------------|---------------------|
| '80     | K               | 6-229                                     | Chev.               | 2 bbl.        | 115 @ 4000                    | 175 @ 2000                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | A               | 6-231                                     | Buick               | 2 bbl.        | 110 @ 3800                    | 190 @ 1600                           | 3.800 × 3.400       | 8.0:1             | 45                  |
|         | J               | 8-267                                     | Chev.               | 2 bbl.        | 120 @ 3600                    | 215 @ 2000                           | 3.500 × 3.480       | 8.3:1             | 45                  |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 155 @ 4000                    | 240 @ 1600                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | H               | 8-305 Calif.                              | Chev.               | 4 bbl.        | 155 @ 4000                    | 230 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | H               | 8-305/Z28                                 | Chev.               | 4 bbl.        | 165 @ 4000                    | 245 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | L               | 8-350                                     | Chev.               | 4 bbl.        | 190 @ 4200                    | 280 @ 2400                           | 4.000 × 3.480       | 8.2:1             | 45                  |
| '81     | K               | 6-229                                     | Chev.               | 2 bbl.        | 110 @ 4200                    | 170 @ 2000                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | A               | 6-231                                     | Buick               | 2 bbl.        | 110 @ 3800                    | 190 @ 1600                           | 3.800 × 3.400       | 8.0:1             | 45                  |
|         | J               | 8-267                                     | Chev.               | 2 bbl.        | 115 @ 4000                    | 200 @ 2400                           | 3.500 × 3.480       | 8.3:1             | 45                  |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 150 @ 3800                    | 240 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | H               | 8-305/Z28                                 | Chev.               | 4 bbl.        | 165 @ 4000                    | 245 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 45                  |
|         | L               | 8-350                                     | Chev.               | 4 bbl.        | 175 @ 4000                    | 275 @ 2400                           | 4.000 × 3.480       | 8.2:1             | 45                  |
| '82     | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000                     | 134 @ 2400                           | 4.000 × 3.000       | 8.2:1             | 36-4                |
|         | 1               | 6-173                                     | Chev.               | 2 bbl.        | 102 @ 4800                    | 145 @ 2400                           | 3.503 × 2.992       | 8.5:1             | 40                  |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 145 @ 4000                    | 240 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 40                  |
|         | 7               | 8-305                                     | Chev.               | TBI           | 165 @ 4200                    | 240 @ 2400                           | 3.736 × 3.480       | 9.5:1             | 40                  |
| '83     | 2               | 4-151                                     | Pont.               | TBI           | 92 @ 4000                     | 134 @ 2400                           | 4.000 × 3.000       | 8.2:1             | 36-4                |
|         | 1               | 6-173                                     | Chev.               | 2 bbl.        | 102 @ 4800                    | 145 @ 2400                           | 3.503 × 2.992       | 8.5:1             | 40                  |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 145 @ 4000                    | 240 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 40                  |
|         | S               | 8-305                                     | Chev.               | TBI           | 175 @ 4200                    | 250 @ 2800                           | 3.736 × 3.480       | 9.5:1             | 50-6                |
| '84     | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000                     | 134 @ 2400                           | 4.000 × 3.000       | 8.2:1             | 36-4                |
|         | 1               | 6-173                                     | Chev.               | 2 bbl.        | 102 @ 4800                    | 145 @ 2400                           | 3.503 × 2.992       | 8.5:1             | 40                  |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 145 @ 4000                    | 240 @ 2400                           | 3.736 × 3.480       | 8.6:1             | 40                  |
|         | G               | 8-305                                     | Chev.               | 4 bbl.        | 190 @ 4800                    | 240 @ 3200                           | 3.736 × 3.480       | 9.5:1             | 40                  |
| '85-'87 | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000                     | 134 @ 2400                           | 4.000 × 3.000       | 9.0:1             | 36-4                |
|         | F               | 8-305                                     | Chev.               | TPI           | 265 @ 4400                    | 275 @ 3200                           | 3.736 × 3.480       | 9.5:1             | 40                  |
|         | S               | 6-173                                     | Chev.               | MFI           | 135 @ 5100                    | 165 @ 3600                           | 3.503 × 2.992       | 8.9:1             | 40                  |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 155 @ 4200                    | 245 @ 2000                           | 3.736 × 3.480       | 9.5:1             | 40                  |
|         | G               | 8-305                                     | Chev.               | 4 bbl.        | 190 @ 4800                    | 240 @ 3200                           | 3.736 × 3.480       | 9.5:1             | 40                  |
|         | 8               | 8-350                                     | Chev.               | TPI           | 230 @ 4000                    | 330 @ 3200                           | 4.000 × 3.480       | 9.5:1             | 50-6                |

① Horsepower and torque are SAE net figures. They are measured at the rear of the transmission with all accessories installed and operating. Since the figures vary when a given engine is installed in different models, some are representative, rather than exact.

## GENERAL ENGINE SPECIFICATIONS

### Firebird

| Year | Engine VIN Code | Engine No. of Cyl. Displacement (cu. in.) | Engine Manufacturer | Fuel Delivery | Horsepower @ rpm <sup>①</sup> | Torque @ rpm (ft. lbs.) <sup>①</sup> | Bore × Stroke (in.) | Compression Ratio | Oil Pressure (2050 rpm) |
|------|-----------------|---|---------------------|---------------|-------------------------------|--------------------------------------|---------------------|-------------------|-------------------------|
| '80  | A               | 6-231                                     | Buick               | 2 bbl.        | 115 @ 3800                    | 188 @ 2000                           | 3.800 × 3.400       | 8.0:1             | 37                      |
|      | S               | 8-265                                     | Pont.               | 2 bbl.        | 120 @ 3600                    | 210 @ 1600                           | 3.750 × 3.000       | 8.3:1             | 37 <sup>③</sup>         |
|      | W               | 8-301                                     | Pont.               | 4 bbl.        | 150 @ 4000                    | 240 @ 2000                           | 4.000 × 3.000       | 8.1:1             | 38 <sup>③</sup>         |
|      | H               | 8-305                                     | Chev.               | 4 bbl.        | 150 @ 3800                    | 230 @ 2400                           | 3.736 × 3.480       | 8.4:1             | 40                      |





## GENERAL ENGINE SPECIFICATIONS Firebird

| Year    | Engine VIN Code | Engine No. of Cyl. Displacement (cu. in.) | Engine Manufacturer | Fuel Delivery | Horsepower (at rpm) ① | Torque (ft. lbs.) ① | Bore x Stroke (in.) | Compression Ratio | Oil Pressure (at 2050 rpm) |
|---------|-----------------|---|---------------------|---------------|-----------------------|---------------------|---------------------|-------------------|----------------------------|
| '81     | A               | 6-231                                     | Buick               | 2 bbl.        | 115 @ 3800            | 190 @ 1600          | 3.800 x 3.400       | 8.0:1             | 37                         |
|         | S               | 8-265                                     | Pont.               | 2 bbl.        | 119 @ 4000            | 205 @ 2000          | 3.750 x 3.000       | 8.3:1             | 38③                        |
|         | W               | 8-301                                     | Pont.               | 4 bbl.        | 155 @ 4000            | 245 @ 2000          | 4.000 x 3.000       | 8.1:1             | 38③                        |
|         | T               | 8-301②                                    | Pont.               | 4 bbl.        | 210 @ 4000            | 340 @ 2000          | 4.000 x 3.000       | 7.5:1             | 58③                        |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 155 @ 3800            | 240 @ 2400          | 3.736 x 3.480       | 8.6:1             | 40                         |
| '82     | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000             | 134 @ 2400          | 4.000 x 3.000       | 8.2:1             | 36-41                      |
|         | 1               | 6-173                                     | Chev.               | 2 bbl.        | 102 @ 4800            | 145 @ 2400          | 3.503 x 2.992       | 8.5:1             | 40                         |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 145 @ 4000            | 240 @ 2400          | 3.736 x 3.480       | 8.6:1             | 40                         |
|         | 7               | 8-305                                     | Chev.               | TBI           | 175 @ 4200            | 240 @ 2400          | 3.736 x 3.480       | 9.5:1             | 40                         |
| '83     | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000             | 134 @ 2400          | 4.000 x 3.000       | 8.2:1             | 36-41                      |
|         | 1               | 6-173                                     | Chev.               | 2 bbl.        | 102 @ 4800            | 145 @ 2400          | 3.503 x 2.992       | 8.5:1             | 40                         |
|         | L               | 6-173                                     | Chev.               | 2 bbl.        | 125 @ 5400            | 145 @ 2400          | 3.503 x 2.992       | 8.9:1             | 50-65                      |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 145 @ 4000            | 240 @ 2400          | 3.736 x 3.480       | 8.6:1             | 40                         |
|         | S               | 8-305                                     | Chev.               | TBI           | 175 @ 4200            | 250 @ 2800          | 3.736 x 3.480       | 9.5:1             | 50-65                      |
| '84     | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000             | 134 @ 2400          | 4.000 x 3.000       | 8.2:1             | 36-41                      |
|         | 1               | 6-173                                     | Chev.               | 2 bbl.        | 102 @ 4800            | 145 @ 2400          | 3.503 x 2.992       | 8.5:1             | 40                         |
|         | L               | 6-173HO                                   | Chev.               | 2 bbl.        | 125 @ 5400            | 145 @ 2400          | 3.503 x 2.992       | 8.9:1             | 50-65                      |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 145 @ 4000            | 240 @ 2400          | 3.736 x 3.480       | 8.6:1             | 40                         |
|         | G               | 8-305                                     | Chev.               | 4 bbl.        | 190 @ 4800            | 240 @ 3200          | 3.736 x 3.480       | 9.5:1             | 40                         |
| '85-'87 | 2               | 4-151                                     | Pont.               | TBI           | 90 @ 4000             | 134 @ 2400          | 4.000 x 3.000       | 8.2:1             | 36-41                      |
|         | S               | 6-173                                     | Chev.               | MFI           | 135 @ 5100            | 165 @ 3600          | 3.503 x 2.992       | 8.9:1             | 40                         |
|         | H               | 8-305                                     | Chev.               | 4 bbl.        | 155 @ 4200            | 245 @ 2000          | 3.736 x 3.480       | 8.6:1             | 40                         |
|         | G               | 8-305                                     | Chev.               | 4 bbl.        | 180 @ 4800            | 240 @ 3200          | 3.736 x 3.480       | 9.5:1             | 40                         |
|         | F               | 8-305                                     | Chev.               | TPI           | 215 @ 4400            | 275 @ 3200          | 3.736 x 3.480       | 9.5:1             | 50-65                      |

TBI—Throttle Body Injection  
MFI—Multi-Port Fuel Injection  
TPI—Tuned Port Injection

① Horsepower and torque are SAE net figures.  
They are measured at the rear of the transmission with all accessories installed and operating. Since the figures vary when a given engine is installed in different models, some are representative, rather than exact.

② Turbo charged engine

③ Oil pressure above 2600 rpm

## TUNE-UP SPECIFICATIONS Camaro

| Year | Engine VIN Code | Engine No. of Cyl. Displacement (cu. in.) | Engine Manufacturer | Spark Plugs |           | Ignition Timing (deg) ① ② |              | Intake Valve Opens (deg) ③ | Fuel Pump Pressure (psi) | Idle Speed (rpm) ① ② |              |
|------|-----------------|---|---------------------|-------------|-----------|---------------------------|--------------|----------------------------|--------------------------|----------------------|--------------|
|      |                 |   |                     | Type        | Gap (in.) | Man. Trans.               | Auto. Trans. |                            |                          | Man. Trans.          | Auto. Trans. |
| '80  | K               | 6-229                                     | Chev.               | R-45TS⑤     | 0.045     | 8B                        | 12B          | 42                         | 4½-6                     | 700                  | 600          |
|      | A               | 6-231                                     | Buick               | R-45TSX     | 0.060     | —                         | 15B          | 16                         | 4¼-5¾                    | —                    | 600          |
|      | J               | 8-267                                     | Chev.               | R-45TS      | 0.045     | —                         | 4B           | 28                         | 7½-9                     | —                    | 500          |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | 4B                        | 4B           | 28                         | 7½-9                     | 700                  | 500(550)     |
|      | L               | 8-350                                     | Chev.               | R-45TS      | 0.045     | 6B                        | 6B           | 28                         | 7½-9                     | 700                  | 500          |
| '81  | K               | 6-229                                     | Chev.               | R-45TS      | 0.045     | 6B                        | 6B           | 42                         | 4½-6                     | 700⑥                 | 600⑥         |
|      | A               | 6-231                                     | Buick               | R-45TS8     | 0.080     | —                         | 15B          | 16                         | 4¼-5¾                    | —                    | 500⑥         |
|      | J               | 8-267                                     | Chev.               | R-45TS      | 0.045     | —                         | 6B           | 44                         | 7½-9                     | —                    | 500⑥         |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | 6B                        | 6B           | 44                         | 7½-9                     | 700                  | 500          |
|      | L               | 8-350                                     | Chev.               | R-45TS      | 0.045     | —                         | 6B           | 38                         | 7½-9                     | —                    | 500⑥         |





## TUNE-UP SPECIFICATIONS Firebird

| Year | Engine VIN Code | Engine No. of Cyl. Displacement (cu. in.) | Engine Manufacturer | Spark Plugs |           | Ignition Timing (deg) ③ ④ |              | Intake Valve Opens (deg) ⑤ | Fuel Pump Pressure (psi) | Idle Speed (rpm) ③ ④ |              |
|------|-----------------|---|---------------------|-------------|-----------|---------------------------|--------------|----------------------------|--------------------------|----------------------|--------------|
|      |                 |   |                     | Type        | Gap (in.) | Man. Trans.               | Auto. Trans. |                            |                          | Man. Trans.          | Auto. Trans. |
| '82  | 2               | 4-151                                     | Pont.               | R-44TSX     | 0.060     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
|      | 1               | 6-173                                     | Chev.               | R-43TS      | 0.045     | ⑨                         | ⑨            | —                          | 5.5-6.5                  | ⑨                    | ⑨            |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | —                          | 5.5-6.5                  | ⑨                    | ⑨            |
|      | 7               | 8-305                                     | Chev.               | R-45TS ②    | 0.045     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
| '83  | 2               | 4-151                                     | Pont.               | R-44TSX     | 0.060     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
|      | 1               | 6-173                                     | Chev.               | R-43CTS     | 0.045     | ⑨                         | ⑨            | —                          | 5.5-6.5                  | ⑨                    | ⑨            |
|      | L               | 6-173HO                                   | Chev.               | R-42CTS     | 0.045     | ⑨                         | ⑨            | —                          | 6-7½                     | ⑨                    | ⑨            |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | —                          | 5.5-6.5                  | ⑨                    | ⑨            |
|      | S               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
| '84  | 2               | 4-151                                     | Pont.               | R-44TSX     | 0.060     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
|      | 1               | 6-173                                     | Chev.               | R-43CTS     | 0.045     | ⑨                         | ⑨            | —                          | 5½-6½                    | ⑨                    | ⑨            |
|      | L               | 6-173                                     | Chev.               | R-42CTS     | 0.045     | ⑨                         | ⑨            | —                          | 6-7½                     | ⑨                    | ⑨            |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | NA                         | 5½-6½                    | ⑨                    | ⑨            |
|      | G               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
| '85  | 2               | 4-151                                     | Pont.               | R-43TSX     | 0.060     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
|      | S               | 6-173                                     | Chev.               | R-42CTS     | 0.045     | ⑨                         | ⑨            | —                          | 40.5-47                  | ⑨                    | ⑨            |
|      | F               | 8-305                                     | Chev.               | R-43CTS     | 0.045     | ⑨                         | ⑨            | —                          | 40.5-47                  | ⑨                    | ⑨            |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | —                          | 5½-6½                    | ⑨                    | ⑨            |
|      | G               | 8-305                                     | Chev.               | R-44TS      | 0.045     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
| '86  | 2               | 4-151                                     | Pont.               | R-43CTS6    | 0.060     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
|      | S               | 6-173                                     | Chev.               | R-42CTS     | 0.045     | ⑨                         | ⑨            | —                          | 40½-47                   | ⑨                    | ⑨            |
|      | F               | 8-305                                     | Chev.               | R-43TS      | 0.035     | ⑨                         | ⑨            | —                          | 40½-47                   | ⑨                    | ⑨            |
|      | H               | 8-305                                     | Chev.               | R-45TS      | 0.045     | ⑨                         | ⑨            | —                          | 5½-6½                    | ⑨                    | ⑨            |
|      | G               | 8-305                                     | Chev.               | R-43TS      | 0.035     | ⑨                         | ⑨            | —                          | 9-13                     | ⑨                    | ⑨            |
| '87  | All             | See Underhood Specifications Sticker      |                     |             |           |                           |              |                            |                          |                      |              |

**NOTE:** The underhood specifications sticker often reflects tune-up specification changes made during the production run. Sticker figures must always be used if they disagree with those in this chart. Part numbers in this chart are not recommendations by Chilton for any product by brand name.

All models use electronic ignition systems.

B Before Top Dead Center

TDC Top Dead Center

— Not applicable

NA—Not available

① Lower figure indicates idle speed with solenoid disconnected

② R-44TS if a colder plug is needed

③ See text for procedure

④ Figure in parentheses indicates California engine

③ All figures are in degrees Before Top Dead Center. Where two figures appear, the first represents timing with manual transmission, the second with automatic transmission  
Auto—29  
Trans Am—16

⑥ All M/T and low altitude A/T—R-45TS, gap 0.040

⑦ With performance package

⑧ Turbocharged engine

⑨ These functions are controlled by the emissions computer. In rare instances when adjustment is necessary, refer to the underhood emissions sticker for specifications.





# GM "F" BODY

## CAPACITIES Firebird

| Year    | Engine VIN Code | Engine No. Cyl. Displacement (cu. in.) | Engine Crankcase (Add 1 Qt For New Filter) | Transmission (Pts-to-Refill After Draining) |        |                   | Drive Axle (pts) | Gasoline Tank (gals) | Cooling System (qts) |          |
|---------|-----------------|--|--|---|--------|-------------------|------------------|----------------------|----------------------|----------|
|         |                 |  |  | Manual                                      |        | Automatic (Pts.)① |                  |                      | With Heater          | With A/C |
|         |                 |  |  | 3 Spd.                                      | 4 Spd. |                   |                  |                      |                      |          |
| '82     | 2               | 4-151                                  | 3②   | —   | 4.3    | 8.5               | 3.5              | 16.0                 | 12.8                 | 13.0     |
|         | 1               | 6-173                                  | 4②   | —   | 4.3    | 8.5               | 3.5              | 16.0                 | 12.8                 | 12.8     |
|         | H               | 8-305                                  | 4  | —   | 4.3    | 8.5               | 3.5              | 16.0                 | 17.2                 | 17.2     |
|         | 7               | 8-305                                  | 4  | —   | 4.3    | 8.5               | 3.5              | 16.0                 | 15.9                 | 15.9     |
| '83     | 2               | 4-151                                  | 3②   | —   | 4.3③   | 8.5④              | 3.5              | 16.0                 | 12.8                 | 13.0     |
|         | 1,L             | 6-173                                  | 4②   | —   | 4.3③   | 8.5④              | 3.5              | 16.0                 | 12.8                 | 12.8     |
|         | H               | 8-305                                  | 4  | —   | 4.3③   | 8.5④              | 3.5              | 16.0                 | 17.2                 | 17.2     |
|         | S               | 8-305                                  | 4  | —   | 4.3③   | 8.5④              | 3.5              | 16.0                 | 15.9                 | 15.9     |
| '84     | 2               | 4-151                                  | 3②   | —   | 3.5③   | 8.5④              | 3.5              | 16.0                 | 8.8                  | 9.1      |
|         | 1,L             | 6-173                                  | 4②   | —   | 3.5③   | 8.5④              | 3.5              | 16.0                 | 12.5                 | 12.5     |
|         | H               | 8-305                                  | 4  | —   | 3.5③   | 8.5④              | 3.5              | 16.0                 | 15.0                 | 15.0     |
|         | G               | 8-305                                  | 4  | —   | 3.5③   | 8.5④              | 3.5              | 16.0                 | 15.0                 | 15.0     |
| '85-'87 | 2               | 4-151                                  | 3②   | —   | 2.5③   | 9.5④              | 3.5              | 15.5                 | 13.0                 | 12.4     |
|         | S               | 6-173                                  | 4②   | —   | 2.5③   | 9.5④              | 3.5              | 15.5                 | 12.5                 | 12.5     |
|         | H               | 8-305                                  | 4  | —   | 2.5③   | 9.5④              | 3.5              | 16.0                 | 17.2                 | 17.2     |
|         | G               | 8-305                                  | 4  | —   | 2.5③   | 9.5④              | 3.5              | 16.0                 | 17.2                 | 17.2     |
|         | F               | 8-305                                  | 4  | —   | 2.5③   | 9.5④              | 3.5              | 15.5                 | 17.0                 | 16.9     |

—Not applicable

① Drain and refill only—does not include torque converter.

② Capacity same with or without filter change.

③ 5-speed—6.87 pints

④ Overdrive transmission—9.9 pints. Add 4 pints, run engine and check dipstick-fill as necessary

## VALVE SPECIFICATIONS Camaro

| Year    | Engine VIN Code | Engine No. Cyl. Displacement (cu. in.) | Seat Angle (deg) | Face Angle (deg) | Spring Test Pressure (lbs. @ in.) | Spring Installed Height (in.)   | Stem-to-Guide Clearance (in.) |                          | Stem Diameter (in.) |             |
|---------|-----------------|--|------------------|------------------|-----------------------------------|---------------------------------|-------------------------------|--------------------------|---------------------|-------------|
|         |                 |  |                  |                  |                                   |                                 | Intake                        | Exhaust                  | Intake              | Exhaust     |
|         |                 |  |                  |                  |                                   |                                 |                               |                          |                     |             |
| '80-'81 | K               | 6-229                                  | 46               | 45               | 200 @ 1.25                        | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3414               | .3414       |
|         | A               | 6-231                                  | 45               | 45               | 168 @ 1.33                        | 1 <sup>47</sup> / <sub>64</sub> | .0015-.0032                   | .0015-.0032              | .3407               | .3409       |
|         | J               | 8-267                                  | 46               | 45               | 200 @ 1.25                        | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3414               | .3414       |
|         | H               | 8-305                                  | 46               | 45               | 200 @ 1.25                        | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3414               | .3414       |
|         | L               | 8-350                                  | 46               | 45               | 200 @ 1.25                        | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3414               | .3414       |
| '82-'84 | 2               | 4-151                                  | 46               | 45               | 122-180 @ 1.25                    | 1.69                            | .0010-.0027                   | .0010-.0027 <sup>①</sup> | .3418-.3425         | .3418-.3425 |
|         | 1               | 6-173                                  | 46               | 45               | 194 @ 1.18                        | 1.57                            | .0010-.0026                   | .0010-.0026              | .3410-.3420         | .3410-.3420 |
|         | H,7,S,G         | 8-305                                  | 46               | 45               | 194-206 @ 1.25                    | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3410-.3420         | .3410-.3420 |
| '85-'87 | 2               | 4-151                                  | 46               | 45               | 170-180 @ 1.25                    | 1.69                            | .0010-.0027                   | .0010-.0027 <sup>①</sup> | .3420-.3430         | .3420-.3430 |
|         | S               | 6-173                                  | 46               | 45               | 194 @ 1.18                        | 1.57                            | .0010-.0026                   | .0010-.0026              | .3410-.3420         | .3410-.3420 |
|         | F,G,H           | 8-305                                  | 46               | 45               | 194-206 @ 1.25                    | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3410-.3420         | .3410-.3420 |
|         | 8               | 8-350                                  | 46               | 45               | 194-206 @ 1.25                    | 1 <sup>23</sup> / <sub>32</sub> | .0010-.0027                   | .0010-.0027              | .3410-.3420         | .3410-.3420 |

① Figure given is measured at the top of the guide; .0020-.0037 is measured at the bottom of the guide.



## VALVE SPECIFICATIONS Firebird

| Year | Engine VIN Code | Engine No. Cyl. Displacement (cu. in.) | Seat Angle (deg) | Face Angle (deg) | Spring Test Pressure (lbs. @ in.) | Spring Installed Height (in.) | Stem-to-Guide Clearance (in.) |              | Stem Diameter (in.) |             |
|------|-----------------|--|------------------|------------------|-----------------------------------|-------------------------------|-------------------------------|--------------|---------------------|-------------|
|      |                 |  |                  |                  |                                   |                               | Intake                        | Exhaust      | Intake              | Exhaust     |
|      | A               | 6-231                                  | 45               | 45               | 182 @ 1.34                        | 1.47/64                       | .0015-.0032                   | .0015-.0032  | .3402-.3412         | .3405-.3412 |
|      | S               | 8-265                                  | 46               | 45               | 175 @ 1.29                        | 1.43/64                       | .0010-.0027                   | .0010-.0027② | .3425               | .3425       |
|      | W               | 8-301                                  | 46               | 45               | 175 @ 1.29                        | 1.43/64                       | .0010-.0027                   | .0010-.0027② | .3425               | .3425       |
|      | H               | 8-305                                  | 46               | 45               | 199 @ 1.25                        | 1.23/32                       | .0010-.0037                   | .0010-.0047  | .3414               | .3414       |
|      | A               | 6-231                                  | 45               | 44               | 182 @ 1.34                        | 1.47/64                       | .0015-.0035                   | .0015-.0032  | .3401-.3412         | .3405-.3412 |
|      | S               | 8-265                                  | 46               | 45               | 175 @ 1.29                        | 1.43/64                       | .0010-.0027                   | .0010-.0027② | .3425               | .3425       |
|      | W,T             | 8-301                                  | 46               | 45               | 175 @ 1.29                        | 1.43/64                       | .0010-.0027                   | .0010-.0027② | .3425               | .3425       |
|      | H               | 8-305                                  | 46               | 45               | 194 @ 1.25                        | 1.23/32                       | .0010-.0027                   | .0010-.0027  | .3425-.3432         | .3420-.3427 |
| -84  | 2               | 4-151                                  | 46               | 45               | 122-180 @ 1.25                    | 1.69                          | .0010-.0027                   | .0010-.0027① | .3418-.3425         | .3418-.3425 |
|      | 1,L             | 6-173                                  | 46               | 45               | 194 @ 1.18                        | 1.57                          | .0010-.0026                   | .0010-.0026  | .3410-.3420         | .3410-.3420 |
|      | 7,G,H,S         | 8-305                                  | 46               | 45               | 194-206 @ 1.25                    | 1.23/32                       | .0010-.0027                   | .0010-.0027  | .3410-.3420         | .3410-.3420 |
| -87  | 2               | 4-151                                  | 46               | 45               | 170-180 @ 1.25                    | 1.69                          | .0010-.0027                   | .0010-.0027① | .3420-.3430         | .3420-.3430 |
|      | S               | 6-173                                  | 46               | 45               | 194 @ 1.18                        | 1.57                          | .0010-.0026                   | .0010-.0026  | .3410-.3420         | .3410-.3420 |
|      | F,G,H           | 8-305                                  | 46               | 45               | 194-206 @ 1.25                    | 1.23/32                       | .0010-.0027                   | .0010-.0027  | .3410-.3420         | .3410-.3420 |

Not available

Figure given is measured at the top of the guide;

.0020-.0037 is measured at the bottom of the guide.

Bottom exhaust: .0020-.0037

## TORQUE SPECIFICATIONS Camaro

All readings in ft. lbs.

| Year | Engine VIN Code | Engine No. Cyl. Displacement (cu. in.) | Cylinder Head Bolts | Rod Bearing Bolts | Main Bearing Bolts | Crankshaft Pulley Bolts | Flywheel-to-Crankshaft Bolts | Manifold |         |
|------|-----------------|--|---------------------|-------------------|--------------------|-------------------------|------------------------------|----------|---------|
|      |                 |  |                     |                   |                    |                         |                              | Intake   | Exhaust |
| 84   | 2               | 4-151                                  | 85                  | 32                | 70                 | 160                     | 44                           | 29       | 44      |
| 84   | 1               | 6-173                                  | 70                  | 37                | 69                 | 75                      | 50                           | 23       | 25      |
| 81   | K               | 6-229                                  | 65                  | 45                | 70                 | 60                      | 60                           | 30       | 20      |
| 81   | A               | 6-231                                  | 80                  | 40                | 100                | 175                     | 60                           | 45       | 25      |
| 81   | J               | 8-267                                  | 65                  | 45                | 70                 | 60                      | 60                           | 30①      | 20      |
|      | 2               | 4-151                                  | 92                  | 32                | 70                 | 200                     | 44                           | ④        | ④       |
| 81   | L               | 8-350                                  | 65                  | 45                | 70                 | 60                      | 60                           | 30①      | 20      |
| 87   | S               | 6-173                                  | 65-90               | 34-45             | 63-83              | 75                      | 50                           | 13-25    | 19-31   |
| 87   | F,G,H           | 8-305                                  | 60-75               | 45                | ③                  | 60                      | 60                           | 25-45    | ②       |
| 84   | H,7,S,G         | 8-305                                  | 65                  | 45                | 70                 | 60                      | 60                           | 30①      | 20      |
| 37   | 2               | 4-151                                  | 92                  | 32                | 70                 | 162                     | 55                           | ④        | ④       |
|      | 8               | 8-350                                  | 60-75               | 42-47             | ③                  | 60                      | 63-85                        | 25-45    | 20-32   |

34 for T.B.I. plate bolts

20-32 ft. lbs.

14-26 ft. lbs.

70-85 ft. lbs.

60-75 ft. lbs.

text and illustration





# GM "F" BODY

## TORQUE SPECIFICATIONS Firebird

All readings in ft. lbs.

| Year    | Engine VIN Code | Engine No. Cyl. Displacement (cu. in.) | Cylinder Head Bolts | Rod Bearing Bolts | Main Bearing Bolts | Crankshaft Bolt | Flywheel to Crankshaft Bolts | Manifold |         |
|---------|-----------------|--|---------------------|-------------------|--------------------|-----------------|------------------------------|----------|---------|
|         |                 |  |                     |                   |                    |                 |                              | Intake   | Exhaust |
| '80-'81 | A               | 6-231                                  | 80                  | 40                | 100                | 225             | 60                           | 45       | 25      |
|         | S               | 8-265                                  | 95                  | 30                | ①                  | 160             | 95                           | 35       | 40      |
|         | W               | 8-301                                  | 95                  | 30                | ①                  | 160             | 95                           | 35       | 40      |
|         | T               | 8-301 Turbo                            | 93                  | 28                | 100                | 163             | —                            | 37       | 40      |
|         | H               | 8-305                                  | 65                  | 45                | 70                 | 60              | 60                           | 30       | 20      |
| '82-'84 | 2               | 4-151                                  | 85                  | 32                | 70                 | 160             | 44                           | 29       | 44      |
|         | 1,L             | 6-173                                  | 65-75               | 34-40             | 63-74              | 66-84           | 45-55                        | 20-25    | 22-28   |
|         | 7,G,H,S         | 8-305                                  | 65                  | 45                | 70                 | 60              | 60                           | 30②      | 20      |
| '85     | 2               | 4-151                                  | 92                  | 32                | 70                 | 200             | 44                           | 29④      | ④       |
| '85-'87 | S               | 6-173                                  | 65-90               | 34-45             | 63-83              | 75              | 50                           | 13-25    | 19-31   |
| '85-'87 | F,G,H           | 8-305                                  | 60-75               | 45                | ⑤                  | 60              | 60                           | 25-45    | ③       |
| '86-'87 | 2               | 4-151                                  | 92                  | 32                | 70                 | 162             | 55                           | ④        | ④       |

① 7/16" bolt—70; 1/2" bolt—100; rear main bearing—100.

② 20-34 for TBI plate bolts

③ Inner: 20-32 ft. lbs.

Outer: 14-26 ft. lbs.

④ See text and illustration

⑤ Inner: 70-85 ft. lbs.

⑥ Outer: 60-75 ft. lbs.

## CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS Camaro

All measurements are given in inches

| Year    | Engine VIN Code | Engine No. Cyl. Displacement (cu. in.) | Crankshaft            |                        |                |               | Connecting Rod   |               |                |
|---------|-----------------|--|-----------------------|------------------------|----------------|---------------|------------------|---------------|----------------|
|         |                 |  | Main Brg Journal Dia. | Main Brg Oil Clearance | Shaft End-Play | Thrust on No. | Journal Diameter | Oil Clearance | Side Clearance |
| '80-'81 | K               | 6-229                                  | ①                     | ②                      | .0020-.0060    | 4             | 2.0986-2.0998    | .0013-.0035   | .0060-.0140    |
|         | A               | 6-231                                  | 2.4995                | .0004-.0015            | .0040-.0080    | 2             | 2.2495-2.2487    | .0005-.0026   | .0060-.0270    |
|         | J               | 8-267                                  | ①                     | ②                      | .0020-.0060    | 5             | 2.0986-2.0998    | .0013-.0035   | .0060-.0140    |
|         | H               | 8-305                                  | ①                     | ②                      | .0020-.0060    | 5             | 2.0986-2.0998    | .0013-.0035   | .0060-.0140    |
|         | L               | 8-350                                  | ①                     | ②                      | .0020-.0060    | 5             | 2.0986-2.0998    | .0013-.0035   | .0060-.0140    |
| '82-'84 | 2               | 4-151                                  | 2.300                 | .0005-.0022            | .0035-.0085    | 5             | 2.000            | .0005-.0026   | .0060-.0220    |
|         | 1               | 6-173                                  | 2.493-2.494           | .0017-.0029            | .0019-.0066    | 3             | 1.998-1.999      | .0014-.0035   | .0060-.0170    |
|         | H,7,S,G         | 8-305                                  | ①                     | ②                      | .0020-.0060    | 5             | 2.098-2.099      | .0018-.0039   | .0080-.0140    |
| '85-'87 | 2               | 4-151                                  | 2.300                 | .0005-.0022            | .0035-.0085    | 5             | 2.000            | .0005-.0026   | .0060-.0220    |
|         | S               | 6-173                                  | 2.647-2.648           | .0016-.0032            | .0019-.0067    | 3             | 1.998-1.999      | .0014-.0035   | .0060-.0170    |
|         | F,G,H           | 8-305                                  | ①                     | ②                      | .0020-.0060    | 5             | 2.098-2.099      | .0018-.0039   | .0080-.0140    |
| '87     | 8               | 8-350                                  | ①                     | ②                      | .0020-.0060    | 5             | 2.098-2.099      | .0018-.0039   | .0080-.0140    |

① No. 1—2.4484-2.4493

Nos. 2, 3, 4—2.4481-2.4490

No. 5—2.4479-2.4488

② No. 1—0.0008-0.0020

Nos. 2, 3, 4—0.0011-0.0023

No. 5—0.0017-0.0032

## CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS Firebird

All measurements are given in inches

| Year    | Engine VIN Code | Engine Displacement (cu. in.) | Crankshaft             |                         |                |               | Connecting Rod   |               |                |
|---------|-----------------|-------------------------------|------------------------|-------------------------|----------------|---------------|------------------|---------------|----------------|
|         |                 |                               | Main Brg. Journal Dia. | Main Brg. Oil Clearance | Shaft End-Play | Thrust on No. | Journal Diameter | Oil Clearance | Side Clearance |
| '80-'81 | A               | 6-231                         | 2.499                  | .0003-.0018             | .0030-.0090    | 2             | 2.000            | .0005-.0026   | .0060-.0230    |
|         | S               | 8-265                         | 3.000                  | .0002-.0018             | .0030-.0090    | 4             | 2.250            | .0005-.0025   | .0060-.0220①   |
|         | W,T             | 8-301                         | 3.000                  | .0002-.0018             | .0030-.0090    | 4             | 2.250            | .0005-.0025   | .0060-.0220①   |





## CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS

### Firebird

All measurements are given in inches

| Year    | Engine VIN Code | Engine Displacement (cu. in.) | Crankshaft             |                         |                |               | Connecting Rod   |               |                |
|---------|-----------------|-------------------------------|------------------------|-------------------------|----------------|---------------|------------------|---------------|----------------|
|         |                 |                               | Main Brg. Journal Dia. | Main Brg. Oil Clearance | Shaft End-Play | Thrust on No. | Journal Diameter | Oil Clearance | Side Clearance |
| '80-'81 | H               | 8-305                         | ④                      | ②                       | .0020-.0060    | 5             | 2.098-2.099      | .0030         | .0060-.0140    |
| '82-'84 | 2               | 4-151                         | 2.300                  | .0005-.0022             | .0035-.0085    | 5             | 2.000            | .0005-.0026   | .0060-.0220    |
|         | 1,L             | 6-173                         | 2.493-2.494            | .0017-.0029             | .0019-.0066    | 3             | 1.998-1.999      | .0014-.0035   | .0060-.0170    |
|         | 7,G,H,S         | 8-305                         | ④                      | ③                       | .0020-.0060    | 5             | 2.098-2.099      | .0018-.0039   | .0080-.0140    |
| '85-'87 | 2               | 4-151                         | 2.300                  | .0005-.0022             | .0035-.0085    | 5             | 2.000            | .0005-.0026   | .0060-.0220    |
|         | S               | 6-173                         | 2.647-2.648            | .0016-.0032             | .0019-.0067    | 3             | 1.998-1.999      | .0014-.0035   | .0060-.0170    |
|         | F,G,H           | 8-305                         | ④                      | ③                       | .0020-.0060    | 5             | 2.098-2.099      | .0018-.0039   | .0080-.0140    |

① Total for two connecting rods

② No. 1: .001-.0015

No.'s 2, 3, 4: .001-.0025

No. 5: .0025-.0035

③ No. 1: .0008-.0020

No.'s 2, 3, 4: .0011-.0023

No. 5: .0017-.0033

④ No. 1: 2.4484-2.4493

No.'s 2, 3, 4: 2.4481-2.4490

No. 5: 2.4479-2.4488

## CAMSHAFT SPECIFICATIONS

### Camaro

All measurements in inches. To convert inches to metric units, refer to Metric Information section.

| Year    | Engine VIN Code | Engine Type/Disp. L(cu in.) | Journal Diameter  |   |   |   |   | Lobe Lift |         | Camshaft End Play |
|---------|-----------------|-----------------------------|-------------------|---|---|---|---|-----------|---------|-------------------|
|         |                 |                             | 1                 | 2 | 3 | 4 | 5 | Intake    | Exhaust |                   |
| '80-'81 | K               | 3.8(6-229)                  | All 1.8682-1.8692 |   |   |   |   | 0.3570    | 0.3900  | 0.004-0.012       |
|         | A               | 3.8(6-231)                  | All 1.7850-1.7860 |   |   |   |   | —         | —       | —                 |
|         | J               | 4.4(8-267)                  | All 1.8682-1.8692 |   |   |   |   | 0.3570    | 0.3900  | 0.004-0.012       |
|         | H               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2484    | 0.2667  | 0.004-0.012       |
|         | L               | 5.7(8-350)                  | All 1.8682-1.8692 |   |   |   |   | 0.2600    | 0.2733  | 0.004-0.012       |
| '82     | 2               | 2.5(4-151)                  | All 1.8690        |   |   |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | 1               | 2.8(6-173)                  | All 1.8976-1.8996 |   |   |   |   | 0.2350    | 0.2660  | —                 |
|         | H               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2380    | 0.2600  | 0.004-0.012       |
|         | 7               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2600    | 0.2730  | 0.004-0.012       |
| '83     | 2               | 2.5(4-151)                  | All 1.8690        |   |   |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | 1               | 2.8(6-173)                  | All 1.8976-1.8996 |   |   |   |   | 0.2350    | 0.2660  | —                 |
|         | H               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2340    | 0.2570  | 0.004-0.012       |
|         | G               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2690    | 0.2760  | 0.004-0.012       |
|         | S               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2570    | 0.2690  | 0.004-0.012       |
| '84     | 2               | 2.5(4-151)                  | All 1.8690        |   |   |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | 1               | 2.8(6-173)                  | All 1.8976-1.8996 |   |   |   |   | 0.2350    | 0.2660  | —                 |
|         | H               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2340    | 0.2570  | 0.004-0.012       |
| '85-'87 | 2               | 2.5(4-151)                  | All 1.8690        |   |   |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | S               | 2.8(6-173)                  | All 1.8976-1.8996 |   |   |   |   | 0.2625    | 0.2732  | —                 |
|         | H               | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2340    | 0.2570  | 0.004-0.012       |
|         | F,G             | 5.0(8-305)                  | All 1.8682-1.8692 |   |   |   |   | 0.2690    | 0.2760  | 0.004-0.012       |
|         | 8               | 5.7(8-350)                  | All 1.8682-1.8692 |   |   |   |   | 0.273     | 0.282   | .0040-.0120       |

— Not available





# GM "F" BODY

## CAMSHAFT SPECIFICATIONS Firebird

All measurements in inches. To convert inches to metric units, refer to Metric Information section.

| Year    | Engine VIN Code | Engine Type/Disp. L(cu in.) | Journal Diameter |   |                   |   |   | Lobe Lift |         | Camshaft End Play |
|---------|-----------------|-----------------------------|------------------|---|-------------------|---|---|-----------|---------|-------------------|
|         |                 |                             | 1                | 2 | 3                 | 4 | 5 | Intake    | Exhaust |                   |
| '80-'81 | A               | 3.8(6-231)                  |                  |   | All 1.7850-1.7860 |   |   | —         | —       | —                 |
|         | S               | 4.3(8-265)                  |                  |   | All 1.9000        |   |   | —         | —       | —                 |
|         | W,T             | 4.9(8-301)                  |                  |   | All 1.9000        |   |   | —         | —       | —                 |
|         | H               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2484    | 0.2667  | 0.004-0.012       |
| '82     | 2               | 2.5(4-151)                  |                  |   | All 1.8690        |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | 1,L             | 2.8(6-173)                  |                  |   | All 1.8976-1.8996 |   |   | 0.2350    | 0.2660  | —                 |
|         | H               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2380    | 0.2600  | 0.004-0.012       |
|         | 7               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2600    | 0.2730  | 0.004-0.012       |
| '83     | 2               | 2.5(4-151)                  |                  |   | All 1.8690        |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | 1,L             | 2.8(6-173)                  |                  |   | All 1.8976-1.8996 |   |   | 0.2350    | 0.2660  | —                 |
|         | H               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2340    | 0.2570  | 0.004-0.012       |
|         | G               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2690    | 0.2760  | 0.004-0.012       |
|         | S               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2570    | 0.2690  | 0.004-0.012       |
| '84     | 2               | 2.5(4-151)                  |                  |   | All 1.8690        |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | 1,L             | 2.8(6-173)                  |                  |   | All 1.8976-1.8996 |   |   | 0.2350    | 0.2660  | —                 |
|         | H               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2340    | 0.2570  | 0.004-0.012       |
|         | G               | 5.0(8-305)                  |                  |   | All 1.862-1.8692  |   |   | 0.2690    | 0.2760  | 0.004-0.012       |
| '85-'87 | 2               | 2.5(4-151)                  |                  |   | All 1.8690        |   |   | 0.3980    | 0.3980  | 0.0015-0.0050     |
|         | S               | 2.8(6-173)                  |                  |   | All 1.8976-1.8996 |   |   | 0.2625    | 0.2732  | —                 |
|         | H               | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2340    | 0.2570  | 0.004-0.012       |
|         | F,G             | 5.0(8-305)                  |                  |   | All 1.8682-1.8692 |   |   | 0.2690    | 0.2760  | 0.004-0.012       |

— Not available

## RING SPECIFICATIONS Camaro

All measurements are given in inches

| Year    | Engine VIN Code | Engine No. of Cyl. Displacement (cu. in.) | Ring Gap        |                    |             | Ring Side Clearance |                    |             |
|---------|-----------------|---|-----------------|--------------------|-------------|---------------------|--------------------|-------------|
|         |                 |   | Top Compression | Bottom Compression | Oil Control | Top Compression     | Bottom Compression | Oil Control |
| '82-'87 | 2               | 4-151                                     | .0100-          | .0100-             | .0150-      | .0015-              | .0015-             | .0010-      |
|         |                 |   | .0220           | .0270              | .0550       | .0030               | .0030              | .0050       |
| '82-'84 | 1               | 6-173                                     | .0098-          | .0098-             | .0020-      | .0011-              | .0015-             | .0078       |
|         |                 |   | .0196           | .0196              | .0550       | .0027               | .0037              | max.        |
| '80-'81 | K               | 6-229                                     | .0100-          | .0100-             | .0150-      | .0012-              | .0012-             | .0020-      |
|         |                 |   | .0200           | .0250              | .0550       | .0032               | .0032              | .0070       |
| '80-'81 | A               | 6-231                                     | .0100-          | .0100-             | .0150-      | .0030-              | .0030-             | .0035       |
|         |                 |   | .0200           | .0200              | .0350       | .0050               | .0050              | max.        |
| '80-'81 | J               | 8-267                                     | .0100-          | .0100-             | .0150-      | .0012-              | .0012-             | .0020-      |
|         |                 |   | .0200           | .0250              | .0550       | .0032               | .0032              | .0070       |
| '80-'81 | L               | 8-350                                     | .0100-          | .0100-             | .0150-      | .0012-              | .0012-             | .0020-      |
|         |                 |   | .0200           | .0250              | .0550       | .0032               | .0032              | .0070       |
| '80-'87 | G               | 8-305                                     | .0100-          | .0100-             | .0150-      | .0012-              | .0012-             | .0020-      |
|         |                 |   | .0200           | .0250              | .0550       | .0032               | .0032              | .0070       |
| '85-'87 | S               | 6-173                                     | .0098-          | .0098-             | .0020-      | .0011-              | .0015-             | .0078       |
|         |                 |   | .0196           | .0196              | .0550       | .0027               | .0037              | max.        |